Berkeley on Abstraction, Universals and Universal Knowledge

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In this paper I make three claims. The first is that, while Berkeley treated the metaphysical problem of universals as unproblematically resolved in favour of nominalism (which he interpreted in an extreme form – see Stoneham 2002, 7.4), he recognised the epistemic problem as a separate issue he needed to engage with and that this is the primary positive contribution of his attack on abstraction. The second is that his solution to the epistemic problem is semiotic, but his semantics here is anthropocentric and pragmatic (in contrast to the semantics of visual language). This will take up the bulk of the paper. The third is that this semantic theory, while it emphasizes the role of signs and thus has some affinities with formalism, has no special role for formal properties of signs and in fact makes formalism hard to achieve.

1. The problem of universals

Berkeley's most direct engagement with the problem of universals appears in the discussion of abstract ideas in the Introduction to the *Principles*. In the published version of 1710 this appears largely as an internal debate amongst nominalists about how best to account for the meaning of general terms, and in particular, whether it is necessary to admit a class of abstract ideas. In other words, it appears that 'the universally received maxim, that *every thing which exists, is particular*' (DHP1 192) is taken as a premise in his discussion, and a more Platonist option is never seriously considered.[1]

But if the metaphysical question is resolved in this manner, that just makes more pressing the epistemic question of universals: if we have universal knowledge,

[1] Why Berkeley should feel so confident that nominalism is universally received is not my topic here, though it is an interesting question which would need one to investigate the publications and reception of the 1675 Oxford University Press edition of Ockham's *Summa Logicae*, which appears to have been one of the few editions since the 15th century. And there is, of course, Hobbes's nominalism as an empiricist precursor, though Berkeley is hardly like to have included Hobbes within the 'received wisdom'. It is also worth noting that Locke attributed the view that everything which exists is particular to Malebranche as well (*Examination*, 45). REFER TO CHAPTER ON MALEBRANCHE HERE.

knowledge which extends beyond our knowledge of particulars, then what is that knowledge *about*? This is not Hume's epistemological problem of induction, it is not a problem of how we get to know universal propositions, but the problem of what it is that we know when we do know them. For the Platonist, to know that man is mortal is not to know something about particular men (though it entails that each particular man is mortal), but to know something about the form of Man, the universal nature of Man.[2] But the nominalist must reject this, raising the question of what universal knowledge is about. The young Berkeley drew attention to this in the Manuscript Introduction version of PHK Intro 15:

> For tho' it be a point much insisted on in the Schools, that all Knowlege is about Universals, yet I ~~could never bring my self to comprehend~~ can by no means See the necessity of this Doctrine. … It is ~~true~~ one thing for a Proposition to be universally true, and another for it to be about Universal natures or notions.
>
> (Belfrage 1987, 26)

But what is it for a proposition to be universally true? To be true it must be true of something or other, and to be universally true it seems that it must be true of something universal. It appears that the abstractionist is offering a nominalistically acceptable account of what it is to be universally true, namely that it is to be true of abstract ideas. These are not the widely rejected universals, for they are merely the 'work of the mind' (Locke, *Essay* 2.5.2 and passim), but they somehow manage to get us beyond particularity. If Berkeley rejects abstraction, he is faced with a significant problem of the cognitive content of universal claims.

When we consider this question, it is significant that Berkeley takes Locke to be his primary antagonist and that he uses a discussion of Locke to introduce the topic of generality in the *Principles* (PHK Introd. 11). Locke had noticed the distinction between merely plural and fully general or universal claims.

[2] I hope it is obvious that I am here picking up on the 17th century usage of 'man' to name our species rather than just one sex. Less controversial examples would be possible, but I want to keep in the reader's mind the distinction Locke makes at *Essay* 3.3.12 (discussed below).

> The next thing therefore to be considered, is, what kind of signification it is, that general words have. For as it is evident, that they do not signify barely one particular thing; for then they would not be general terms, but proper names; so on the other side it is as evident, they do not signify a plurality; for man and men would then signify the same, and the distinction of numbers (as the grammarians call them) would be superfluous and useless. (*Essay*, 3.3.12)

Thus 'All the men are mortal' involves plural reference to all the particular men.[3] But 'Man is mortal' does not seem to have the same content: it is not merely about all the particular men, but about all possible men in virtue of their shared humanity. When we assert that man is mortal, the proposition we assert is not just about some collection of men, perhaps all the men we have or will meet, but anything whatsoever which is a human. As Berkeley puts it when giving the example of a geometrical proof, its generality extends to 'all particular right lines that may possibly exist' (PHK Introd. 12). But if, as Locke claims, 'All things that exist being particulars' (E 3.3.1), then the nominalist struggles to find a subject matter for the proposition: there just are the particular men and nothing else for it to be about.

One might think that the most natural thing for an empiricist to say about this is that 'Man is mortal' has no content beyond 'All men are mortal'. But what Locke is drawing our attention to here is in fact independent of treating 'man' as a noun phrase. For while a 20th century logician might tell you that 'All men are mortal' is equivalent to a huge conjunction of singular propositions, it cannot be the case that the content of our knowledge is given by this conjunction. Nor does the model-theoretic approach help, for telling us that it is true if and only if each

[3] It is possible that Locke is here alluding indirectly (via the 'grammarians') to *De Interpretatione* 7, where Aristotle distinguishes 'Every man is white' from 'Man is white', saying both have universal subjects but only the former has 'universal character'. However, Aristotle's distinction rests some claims about negation (which seem to ignore the possibility that a single sentence can have two negations of different scope) and is not really relevant to what Locke is considering. More significant is Aristotle's move from a division of things into universals and particulars to a division of propositions along the same lines, 'depending on the type of thing about which a claim is made' (Whitaker, 2002, 83). Thanks to Kenneth Pearce for suggesting the allusion to Aristotle.

element of the extension of 'is a human' is an element of the extension of 'is mortal' does not tell us how we think of the extension of those predicates: do we think of them by means of plural reference or some other way? The problem of the content of universal knowledge applies just as much to the proposition 'All men are mortal'. Locke's contrast between 'man' and 'men' would be better made as the contrast between 'All men are mortal' and 'All the people in this room are mortal': despite the universal quantifier, the latter is not universal knowledge but knowledge about a plurality. The point Locke is making is really one about predication: a predicate is not the same as a plural name for everything it applies to. As Quinton nicely puts the point: 'I cannot be introduced to the entire extension of a predicate' (1973, 261).[4] So the epistemic problem arises for even the most faithful empiricist who accepts predication.

As we have seen, Locke's abstract ideas provide one solution to this problem, but one which Berkeley roundly rejects. In the 'Manuscript Introduction' and PHK Introd. 15, Berkeley shows himself to be concerned with what universal knowledge is about and that is also one explicit motivation behind Locke's appeal to abstraction (E 3.3.6). Much of the importance for Berkeley of his alternative to abstract ideas appears to have been that it removed a 'cause of error and difficulty in the sciences' (*Principles*, title page). So far, this appears to have nothing to do with immaterialism but to be a separate philosophical problem.

2. The Role of the Anti-Abstraction Arguments

However, some scholars have argued that Berkeley's rejection of abstract ideas is primarily there as a crucial premise in his argument for immaterialism.[5] Despite their philosophical inventiveness, these interpretations simply lack plausibility when we consider the texts as whole works. While the rejection of abstraction is emphasized, it is not given the structural role we would expect of a

[4] This is quoted in Margolis (1982), a rich and subtle paper which, in effect, lays the foundations for what follows. See especially pages 210-12.

[5] The strongest version of this claim is probably Pappas (2000, *passim* but v. esp. ch.2). Other versions can be found in Atherton (1987, *passim*), Bolton (1987, *passim*), Bracken (1974, ch.4), Doney (1982, 274), Tipton (1974, 133, 157), and Warnock (1953, 187).

major premise. For example, the Introduction to the *Principles* is numbered separately from the main text, making it clumsy to refer back to it, despite the fact that Berkeley uses paragraph numbers for cross-reference both within the Introduction and within the main text. There are four explicit references to the Introduction in the main text of the *Principles*, two generic (PHK 97 and 120) where the possibility of the specific abstract ideas of time and unity is being rejected and the Introduction is referred to for the general argument against abstraction, and two references to specific sections, namely PHK 122 which refers to Introd. 19 and PHK 126 which refers to Introd. 25. The former is to point out that the account of arithmetic being given is 'agreeable' to the account of general terms in the Introduction, and the latter to refer the current discussion of geometry back to the earlier discussion. None of these suggest that the rejection of abstraction is a premise in the argument for immaterialism, though they do suggest it has some role to play in the wider project of removing the causes 'of error and difficulty in the sciences'. And again in the *Three Dialogues* the rejection of abstraction is referred to in general terms but the argument neither repeated nor even cited. Compare this to the way that the theory of vision is treated as an explicit premise in *Alciphron* IV and the *New Theory* was even reprinted with *Alciphron*. The suggestion that Berkeley took the arguments of the Introduction to be a crucial premise in the arguments for immaterialism just does not fit with how he chose to present and publish the material.

Others, myself included (Stoneham, 2005, 154ff), have tried to show that the rejection of abstract ideas has this purely negative role to play in Berkeley's thought. On this interpretation, Berkeley does not take abstraction to be an important philosophical error in itself – after all, it is a form of nominalism – but one which leads some philosophers astray into the thickets of materialism. By rejecting abstraction, Berkeley seeks to remove a crutch which the crippled materialist might rely upon.

While the latter interpretation has a fair amount of support in the texts and captures something Berkeley definitely wanted to achieve, it also underestimates

him as a philosopher. Both interpretations have a common fault: they treat Berkeley as exclusively concerned with the defence of immaterialism. Of course, immaterialism will permeate all Berkeley's thought, but then so does materialism permeate most other philosophers' thinking. He was a sophisticated and well-read enough philosopher to know that the solutions to some important philosophical problems might be neutral with respect to immaterialism, but that does not make the problems any less worthy of his interest and attention. So, even if it had other functions as well, we can legitimately regard his attack on abstraction and his attempt to find a nominalistic alternative as a direct answer to the epistemic problem of universals. And treating it like this turns out to make reconstructing Berkeley's views a little easier.

3. The Semiotic[6] Solution to the Epistemic Problem

Much ink has been spilt over the question of whether Berkeley's criticisms of Locke's theory of abstraction are fair, but our interest here is in reconstructing his alternative, nominalistic account of the meaning of general terms. Unfortunately, this is never systematically laid out, but when we regard it as an attempt to solve the epistemic problem of universals, it can be reconstructed from various short passages (emphasis mine):

> a word becomes general by <u>being made the sign</u>, not of an abstract general idea but, of several particular ideas, any one of which it indifferently suggests to the mind. (PHK Intro 11)

> an idea, which considered in it self is particular, becomes general, by <u>being made to represent</u> or stand for all other particular ideas of the same sort. (PHK Intro 12)

> *universality*, so far as I can comprehend, not consisting in the absolute, positive nature or conception of any thing, but in the relation it bears to the particulars <u>signified or represented by it</u>: by virtue whereof it is that

[6] Locke uses 'semiotic' at *Essay* 4.21.4 and I suspect we can ante-date this usage. In contrast, the OED has no uses of 'semantic' prior to the 19th century. However, I shall talk of denotation etc. as the semantic properties of signs.

> things, names, or notions, being in their own nature *particular*, are rendered *universal.* (PHK Intro 15)
>
> there is no such thing as one precise and definite signification annexed to any general name, they all signifying indifferently a great number of particular ideas. (PHK Intro 18)

Words have semantic properties such as signification, denotation and reference, so it is easy to see Berkeley as here primarily concerned to give an alternative to Locke's philosophy of language (e.g. Stoneham 2002, 7.3): general terms do not denote or signify or represent ideas in the mind of the speaker, rather they signify all the particular things of that kind. They are not names for any or even all of those particulars, for they are not names at all, rather their semantic relation to those particulars is one of 'indifferent denotation'. What exactly this amounts to, we are not told, but we can reasonably infer that it is not plural reference. Rather it is an entirely different kind of semantic relation. Locke has a view which effectively requires each term to be the name of an idea, and that forces him to find ideas for general terms to name, but Berkeley points out, perfectly correctly, that general terms just do not function like that.

Furthermore, he expresses the account with verbs of action, such as 'being made' and 'rendered'. This makes clear that he sees generality as a phenomenon of human language, a phenomenon we actively introduce into a language on top of its referential semantics.[7]

However, treating this as a problem in the philosophy of language[8] appears to leave unanswered the more fundamental question which was also answered by the appeal to abstract ideas: how do we think general thoughts, which are

[7] One might think that the next point, about the need for an account of generality in thought, arises here, for how can we make a sign general without having the intention to do so, and that intention must have a general content. However, it is an oversimplification to think that all semantic intentions are simply intentions to match up signs with pre-existing concepts.
[8] It seems that in the Manuscript Introduction Berkeley did see generality as an entirely linguistic phenomenon, but that by 1710 he realized that if he wanted to avoid the 'embarrass and delusion of words' and still allow for universal knowledge, he would need to allow general ideas in some sense. See Pitcher (1974, 82-3).

presumably what we are trying to express with these general terms? We can see the need for such an account in the rather rhetorical conclusion to the Introduction:

> And he that knows names do not always stand for ideas, will spare himself the labour of looking for ideas, where there are none to be had. It were therefore to be wished that every one would use his utmost endeavours, to obtain a clear view of the ideas he would consider, separating from them all that dress and encumbrance of words which so much contribute to blind the judgment and divide the attention. (PHK Intro 24)

The first sentence tells us not to go looking for abstract ideas as the meanings of general terms and the second tells us to focus our attention not on words but on the ideas we have in mind. But if all Berkeley had said about universality was to give an account of the semantics of general words, then when we discard the dress of words, we would be left with nothing but particular ideas in our minds: it would seem that there is no space for general thoughts in Berkeley's system. And yet section 15 seems to confidently assert that he can allow for universal knowledge:

> It is I know a point much insisted on, that all knowledge and demonstration are about universal notions, to which I fully agree: but then it doth not appear to me that those notions are formed by *abstraction* in the manner premised; *universality*, so far as I can comprehend, not consisting in the absolute, positive nature or conception of any thing, but in the relation it bears to the particulars signified or represented by it. (PHK Intro 15)

If generality were an entirely linguistic phenomenon, and Berkeley thinks that we can and should turn our attention from words to the contents of our minds when doing philosophy, it would be puzzling how he can be so confident that

there is universal knowledge which is 'about universal notions' rather than the particular (for all ideas are particular) ideas adverted to in section 24.

There is, however, no real puzzle because in section 12 he already talks about 'how ideas become general', and he immediately follows it with an example of a geometric proof. Thus it seems that he is prepared to attribute semantic properties not only to words and diagrams but also to the particular ideas we have before the mind. Crucially, he is prepared to attribute to particular ideas the semantic property of indifferently denoting all things of a certain sort. And they acquire this semantic property in the same way that words do, namely by a deliberate act of ours to make them 'indifferently denote'. The crucial move here is to allow that ideas are the sorts of thing that can be signs.[9]

That particular ideas can signify other ideas is a crucial feature of the *New Theory of Vision* (1709). That work is primarily addressed to the question of how we see depth, that is how do we see objects as being distant from us. His premise is that nothing strictly visible could ever carry information about depth because:

> distance being a line directed end-wise to the eye, it projects only one point in the fund of the eye, which point remains invariably the same, whether the distance be longer or shorter. (NTV 2)

He concludes that distance is only ever immediately perceived by touch, however, there are regular, though contingent and arbitrary, connections between certain visual appearances and tangible distances. These contingent connections, once learnt, allow us to know that certain visual appearances represent distance. Berkeley thinks that not merely do these visual objects – light, colours, shapes – possess semantic properties when combined in various ways, but also that they meet the other conditions for being a language and that we should treat the objects of vision as words in a Language of Nature giving us information about the unseen which we need in order to survive (on the claim that they literally form a language, see Stoneham 2012). Because these semantic

[9] There is good reason to think this rules out an adverbial account of ideas.

properties derive from natural connections which we experience all our lives, we do not notice ourselves learning them. Furthermore, once we have learned them, the visual ideas suggest to the mind the ideas they signify without any conscious intervention on our part, much like the way we hear the meaning of words spoken in a familiar language without noticing the step from sound to meaning, and often without even noticing the sounds at all. Hence we think we see distance, for when we see certain visual cues, strictly tangible ideas of distance are straightaway presented to the mind, just as if they were part of the visual experience. And in a sense they are: because the objects of visual experience – light, colours shapes – have semantic properties, they signify other ideas, to one who knows those signification relations the visual experience has a double object, the sign and what it signifies, in precisely the way our experience of human languages has a double object, namely the words and what they signify.

We can now see Berkeley's account of generality as extending the range of semantic properties possessed by ideas. In NTV, the semantic properties of visual ideas were natural, they were created by the contingent, arbitrary but systematic connections between those ideas and ideas of touch (as well as other ideas of sight). The semantic properties of human languages are human creations, be they singular or general. Given the strict parallelism in the Introduction between the generality of words and of ideas, one can infer that this semantic property of our ideas is also a human creation: it is we who make particular ideas stand indifferently for all ideas of the same sort. Hence the emphasis on words and ideas 'being made to represent'. Thus, when thinking the general thought I might choose to express as 'Man is mortal', I might have before my mind the idea of some particular human, it matters not whom but let us say Xanthippe, and I think about humans,[10] rather than just Xanthippe, by giving that particular idea of Xanthippe the semantic property of standing for all humans whatsoever.

[10] Here we can see that the usage of 'man' and 'men' for humans rather than just males becomes impossibly strained when we use an example of a woman. Which is why it is appropriate that that usage should be actively discouraged.

If this is Berkeley's account of generality, why is he so confident that it solves the epistemic problem of universals, that it explains the cognitive content of universal claims? If those claims are not about Platonic universals, and they are not about pluralities of particulars, and nor are they about abstract ideas, what are they about? The closest Berkeley comes to answering this question directly is in a much later work, where he is defending the possibility of belief in the Christian mysteries by drawing parallels with scientific knowledge:

> If I mistake not, all sciences, so far as they are universal and demonstrable by human reason, will be found conversant about signs as their immediate object, though these in the application are referred to things. (A VII.13; see also DHP1 173, DM 7, A VII.11 for similar passages).

Notice how this echoes the PHK Introd. 15 comment that 'all knowledge and demonstration are about universal notions'. So universal sciences are actually about <u>signs</u> – words, diagrams or particular ideas – and these are their immediate content; but being signs, these objects have signification and thus by being about signs the sciences are also about what those signs represent. A sign is not a formal object, but something which essentially has a semantic value. Even in the case of arithmetic, where we have the option to study the signs independently of what they signify because they are 'capable to represent aptly, whatever particular things men had need to compute' (PHK 122), if we do study them 'for their own sake', this is as cognitively pointless as 'controversies purely verbal' (PHK 122).

Which is to say that in all cases of universal knowledge, there are two objects: the signs and what they represent or signify. The former gives no knowledge without the latter, but the latter is, in the case of generality, unthinkable without the former. So that on any given occasion we consider the proposition that man is mortal, the immediate cognitive content is a particular idea of a particular human, say Socrates, or even a particular word, 'men'. Thus, for example, when I consider that proposition, I might be thinking of Socrates and Socrates' famous demise. But if Socrates and his particular death are signs and have been

'rendered universal', then they signify all men and all deaths, and in virtue of thinking about the particulars I can also think and know the universal proposition they represent.

Thus Berkeley's solution to the problem of universal knowledge is that, unlike knowledge of particulars which is concrete and direct, it is essentially semiotic. The problem was generated in such a way that we seemed to need a special kind of object to be the kind of thing a universal proposition is about, but all such objects are found wanting. Berkeley denies we need a special kind of object and instead finds them to be about ordinary objects which have special properties, namely they have been 'rendered universal' in the sense of being made – by us – to represent all things of a particular sort.

This is a striking and original solution to an age-old problem, but one might think that all it does is sweep the problem under the carpet. Surely the problem recurs when Berkeley talks of an idea or other sign being made to signify all things 'of a particular sort' (PHK Introd 12).[11] For then we should ask what makes it the case that two particulars are of the same sort, for example, both are men and thus, since we have claimed that man is mortal, that both are mortal. If the reason both are men is that they are each one of the men, where 'the men' refers to a specific collection of particular men, then it seems that we have failed to make a universal claim at all and our general term 'man' is just another name, but for a plurality rather than a singularity. However, if we say that both are men because both have the property of being human, or both partake of humanity, then we have appealed to something non-particular, a universal of some kind.

It seems that the Platonist and the abstractionist both have accounts of what makes several distinct particulars belong to the same sort, what make Socrates, Xanthippe and Plato all humans; but, by doing away with anything except the particulars themselves, Berkeley appears to leave himself without the possibility

[11] This is a familiar criticism of Berkeley on abstraction which can be found in several places, including Aaron (1967, 65), Bolton (1987, 65-6) and Pitcher (1977, 89-90).

of such an account. When particulars are rendered universal they are given a semantic property which determines that they signify some things and not others, and this property creates a partition not merely amongst the experienced objects, or even the potentially experienced objects, but amongst all objects whatsoever. The possibility of having such a semantic property is precisely the philosophical problem we are dealing with, because it is the problem of determining the cognitive content of a universal claim.

Berkeley is well-aware that Platonists and abstractions are giving an account of what makes several things all of one sort, but seems to think such an account is unnecessary:

> From which it must necessarily follow, that one word be made the sign of a great number of particular ideas, between which there is some likeness, & which are said to be of the same sort. But these sorts are not determin'd & set out by Nature, as was thought by most philosophers. Nor yet are they limited by any precise, abstract ideas settled in the mind, with the general name annexed to them as is the opinion of the author of the Essay, nor do they in truth, seem to me to have any precise bounds or limits at all. (Jessop & Luce, vol.2, 128)[12]

However, his optimism that such an account is unnecessary seems unfounded and he is left with nothing to say about an important philosophical problem.

Those who feel the force of this objection have underestimated the extent of Berkeley's pragmatism. Remember that he has said the immediate objects of universal sciences are in fact signs. The philosophical theory that mathematics is really just about signs and symbols and the rules for manipulating them, known as formalism, is a form of anti-realism, so we should be struck by the anti-realist

[12] I have here quoted from Jessop & Luce, despite the liberties they take with the text. This is because the end of this passage involves much crossings out and re-phrasings and I only want to illustrate Berkeley's awareness of the point rather than his considered opinion upon it. The published introduction contains even less on the issue, supporting my reading that he takes it to be unnecessary to give an account of what makes for sorts of thing. See Appendix.

tone of this view of Berkeley's (though, as PHK 122 makes clear, he is no formalist). By saying that the immediate object of universal knowledge is the signs, Berkeley has moved away from a straightforward realist position which holds that the universal proposition that man is mortal is straightforwardly about men in general, for it is necessarily about some particular object, be it a man or an idea or a word. Yet those particular objects are also signs which are given significance, and significance of a special sort. Thus mathematics and other universal sciences and branches of knowledge are not only about signs, just immediately about them. What those signs signify are concrete particulars.

The objection being raised asks what determines that a given general sign indifferently signifies all and only particulars of a given sort, what makes it that 'men' signifies all and only men. And the first step in Berkeley's answer is the anti-realist move of claiming that, independently of human activity, specifically human representational activity, there are no facts about what sorts of things there are.[13] It is because we have a sign which signifies indifferently Socrates and Xanthippe and Plato and all other humans that they are of the same sort. The semantic properties of general signs do not track the sorts of things there are in the world, for a thorough-going nominalist no more believes in objective sorts than in Platonic forms. Rather, when we 'render the sign universal', when we make it represent in a certain way, we also create the sameness of sort possessed by all humans.

Given that we create these semantic properties, Berkeley not unreasonably concludes that they are a function of our natures and interests. But now a new version of the problem occurs, for if the distinction between a human and another animal on the basis of which the term 'man' applies to the former and not the latter is a function of our interests and nature, then it is far from obvious that the distinction will in fact project determinately over an indefinitely large and varied set. Consider Lucy, the famous *australopithecus afarensis* whose

[13] Of course, there is nothing to prevent God from rendering some sign universal, but then either he is doing it by reference to his own interests or ours. If the latter, then we can grasp the signification of the sign, but the sameness of sort is no different from that possessed by signs we make general. If the former, we cannot grasp the signification.

complete fossilized skeleton was discovered by Leakey. Was she human? Does our commitment to the universal claim that humans are mortal include Lucy? Well, some paleoanthropologists talk of 'early humans' and others are careful to avoid that and only talk of hominins. Is there a definitive answer as to whether Lucy is a human or not, whether she and I are both this sort of thing? Berkeley's answer appears to be that the answer is relative to our interests in making the classification, and ultimately our interests boil down to the 'never enough admired laws of pain and pleasure' (PHK 146). Thus if a question of classification is not useful, that is, it has no impact however indirect on human[14] pleasure and pain, then it is arbitrary. Thus, if we find it useful to treat Lucy as a human, then we should; if we find it hinders us, perhaps impeding our understanding of evolution, then we shouldn't; if it seems to be indifferent to us, then perhaps there is no determinate answer. As he put it in the Manuscript Introduction (admittedly here thinking exclusively about language):

> ... nor do they [sorts] in truth, seem to me to have any precise bounds or limits at all. For if they had I do not see, how there could be those doubts & scruples, about the sorting of particular beings, which are observ'd sometimes to have happened. Neither do I think it necessary the kinds or species of things should be so very accurately bounded & marked out. (Jessop& Luce, vol.2, 128)[15]

As such, Berkeley's approach to universal knowledge may in fact only secure that our universal knowledge is <u>humanly</u> universal, that universal propositions apply determinately only within the range of actual and possible human experience, and even then they will only be as determinate as we have reason to want them

[14] Berkeley is quite liberal about which species can feel pleasure and pain, and would thus allow that a classification may be non-arbitrary in virtue of its impact on, say, avian or even apian pleasure and pain. But we can only make our words general in that way by reference to those other species hedonic states, so we would have to know about them and choose to use our terms that way.

[15] Again I quote from the inaccurate Jessop & Luce edition rather than the Belfrage diplomatic edition, this time because the whole passage is struck through in the manuscript. While this passage lends some support to my interpretation, I do not offer it as evidence of Berkeley's considered views, merely his earlier openness to the kind of pragmatist position I am articulating here. See Appendix.

to be.[16] Since the sameness of sort that we recognise is a human construction, from God's perspective – at least from God's perspective on the world of ideas – there are no facts of the matter whether two particulars belong to the same sort or not (though there will be facts about whether humans take them to so belong, a fact which God can make use of). It follows that, at least from God's perspective, our universal knowledge is not truly universal. But if true universality is possible, it is only accessible to an infinite being, for only such a being could render one of its signs to be truly universal. Hence, insofar as our universal sciences fall short of true universality and only express the humanly universal, that does not matter, for there is nothing they are missing which is intelligible to us finite beings. Furthermore, even if there is true universality, even if God does render signs universal, that is not absolute or objective universality, for it is still relative to His (infinite) interests.

Thus Berkeley's solution to the problem of universal knowledge is that, unlike knowledge of particulars which is concrete and direct, it is essentially semiotic and indirect. This is a nominalist solution because the semantic properties of our general signs are merely arbitrary connections between particulars which are created by finite minds. But we should admit that Berkeley has not really given an adequate solution to the original problem, if we are to take the condition of an adequate solution to be one which achieves all that the question presupposes an answer would achieve. For the epistemic problem of universals was the problem of how we make claims with universal content, claims which extend beyond our knowledge of particulars and are true of an indefinitely large number of things with which we may have no acquaintance: how can we make claims about all beds or all humans if we, and the people we talk to, have only ever come across some finite subset of beds or humans? Berkeley's answer reveals that our universal claims are not really as universal as the Platonist, and

[16] We can, and should, ask whether there is space here for <u>incorrect</u> classification. The answer seems to be that an individual can mistake what the cognitive community has determined the most useful classification to be, and a community can mistake which classification best serves its interests. But it seems that the community, though not the individual who is trying to make her classification conform to the community's, cannot misapply its own classification. Clearly, at this point the epistemic problem of universals connects with the sceptical problem about meaning raised by Kripke's Wittgenstein (Kripke, 1982).

perhaps the abstractionist, took them to be. They do extend beyond our individual experience and the collective experience of any specific group of us, but not indefinitely, for their scope is determined by human interests and those are finite. Were an infinite being to create general signs, they might enable him to make fully universal claims, but we could not grasp their signification. Instead we must settle with what is humanly universal.

4. Language and Formalism

The account I have given here of Berkeley's views on universal knowledge has certain similarities to the account of his views on scientific knowledge given in (Peterschmitt 2009). However, as is so often the case in these matters, the differences are more significant than the similarities. I shall discuss two.

The first significant difference is scholarly. Peterschmitt suggests that the development of Berkeley's thought on these matters between 1710 and 1732 is so substantial that 'on peut dire qu'elles sont parfaitement contraires' (2009, 413). The crucial change is that in 1710 Berkeley takes our knowledge to be restricted to our ideas, but in 1732 he recognises how the formal character of the languages of science allows us to extend our knowledge beyond our ideas. On my view, in contrast, the epistemic problem of universals, which is precisely a problem of how our knowledge can extend beyond our particular ideas, had been a matter of concern since 1708 and a solution was offered in 1710. Admittedly, some parts of the solution are not made fully explicit until *Alciphron* in 1732, but this does not represent a change of view but an addition of important detail. Furthermore, in the discussion of arithmetic at PHK 122, where we are told that 'we regard not the *things* but the *signs*' in recognition of its formal (though not formalist – see above) character, Berkeley explicitly notes the connection with 'what we have before observed, of words in general (*Sect.* 19. *Introd.*)'. And in a letter to Molyneux (19 Dec 1709) he writes that 'to me it appears that all grammar & every part logic contain little else than rules for discourse & ratiocination by words'.

The more interesting disagreement with Peterschmitt is over the formal character of languages which extend our knowledge beyond our ideas. It is to a large extent this emphasis on the formal in *Alciphron* which makes Peterschmitt think there is such a large departure from the *Principles*. But 'formal' is not one of Berkeley's words and it is far from obvious to me that formal properties are really doing much work at all here.

One clear sense in which a language can be formal is that it contains syntactic inference rules. That is, rules which allow one to perform valid inferences without knowing the meaning of the terms in question. Clearly algebra is a formal language in this sense, but in fact all natural languages have some formal elements. Any given language can be more or less formally complete, that is its syntactic inference rules can allow one to perform a greater or lesser proportion of the valid inferences statable in that language. Mathematics and the artificial languages of formal logic tend to have a high degree of completeness – possibly 100% - whereas natural languages contain many valid inferences which are not captured by syntactic inference rules (famously: if the book is red it is not green).

Now, it seems that any given science is distinctively formal in this sense – that is, is formal compared with non-scientific or vulgar discourse – exactly to the extent it is mathematical in the broad sense which includes mathematical logic. And it may well be true that all sciences are more mathematical than non-scientific discourse, but it looks like there is a continuum here, with the vulgar using a fair amount of basic geometry and arithmetic, and theoretical physics being almost entirely mathematical. Being formal in this sense certainly enables a language to extend our knowledge beyond our immediate ideas and in ways that have practical consequences. A simple example which has nothing to do with physics and mechanics is when someone analyses a series of trades on a commodities market, working out how to maximize profit, while having no idea at all about what is being traded.[17] In contrast, sign systems indicating toilets and exits,

[17] When applied in scientific areas where we couldn't have ideas, such as Newtonian kinematics or atomic physics, there is a question about whether the knowledge generated is knowledge of insensible things or merely of the structure of reality. On this I disagree with Peterschmitt (see Stoneham & Cei (2009), Stoneham forthcoming) but that is another issue.

while they have a superficial appearance of syntactic rigour, in fact lack any useful formal properties.

However, with respect to the epistemic problem of universals Berkeley is addressing, it is not the case that the formal character of a language is relevant. This is because the crucial point is the non-denotational semantics of the signs, not their syntactic properties. One might think that the claim that the subject matter of universal claims is the signs themselves makes them in some sense 'formal'. But notice that this is not the sense of 'formal' which Peterschmitt is using to get his result about knowledge extending beyond our ideas: there is nothing about signs themselves which entails the existence of syntactic inference rules. And in fact the situation is worse than that. Syntactic inference rules require that syntactically specified terms are unambiguous. Consider the simple, formal, inference:

Fa
a=b

Fb

Setting aside the identity sign, there are here three terms (a, b, F), each of which occurs twice. If the semantic value of the two occurrences of any of those terms were different, then the inference would be invalid. But notice that in natural languages, many words, formally defined as sequences of letters, are ambiguous and thus they can have occurrences which differ in semantic value (and if the form of a spoken word is the sound, things are even worse). So in fact, no formally specified instance of that inference in a natural language is guaranteed to be valid. Consider, for example,

George is a novelist.
George is Eric.

Eric is a novelist.

If 'Eric' in the second premise refers to Eric Blair (making it true), but 'Eric' in the conclusion refers to Eric Bloodaxe (making it false), the inference is invalid.

Similar problems arise with predicates. Without semantic knowledge we cannot tell whether this is a good inference or a fallacy.

So the more interested we are in formal inferences, the more work we need to do to remove ambiguities from our language. But Berkeley's sign system does exactly the opposite, for it actively encourages radical polysemy by insisting (as he has to, given his nominalism) that the signs which possess semantic value are particulars (e.g. 'so the name *line* which taken absolutely is particular, by being a sign is made general'; PHK Intro 12, my emphasis), be they marks on paper, sounds or ideas. So if we both write the word 'triangle' there are two signs, and in the inference above there are four names and two predicates: to say there are two names and one predicate, each with two occurrences, as I did above, is not for Berkeley to speak of signs but of what they signify, for it is to type the signs by their significations.

Even worse, one particular sign can signify different things on different occasions or in different contexts. This is particularly obvious when the signs are ideas: my idea of Peter might be made to signify *man* in one context and *animal* in another (PHK Intro 16, but most clear at NTV 72-3).

Of course there are plenty of things we can do to make a specific sign system more formal, eliminating context sensitivity and polysemy, but these are hard-won achievements in maths and science, not essential features of sign systems themselves. On the contrary, given Berkeley's theory of signs, formal properties have no essential role at all and semantic knowledge is fundamental.[18]

[18] Earlier versions of this paper were presented at the Iranian Research Institute in Philosophy, the International Berkeley Conference in Zurich, the Scuola Normale Superiore in Pisa and the Institute for Foreign Philosophy at Peking University. Audiences at these events provided excellent questions and discussion which have helped improve the paper considerably.

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APPENDIX

I quoted two consecutive passages from the Jessop & Luce edition of the Manuscript Introduction, noting that the actual Manuscript contains many strikings and variations that Jessop & Luce simplify. For completeness, this is the diplomatic edition of the same passages, from the bottom of folio 10 and the top of folio 11:

ticular [~~Word to c~~] Sign or Name to every one of them. From which it
must necessarily follow, that one Word be made the sign of a great
number of particular Ideas, between which there is some likeness,
& which are said to be of the Same Sort. <But △ this Sort [~~was~~] not de-
termin'd & set out by Nature, as was thought by Most Philosophers.
Nor yet [~~was~~] it] limited by any precise, Abstract Idea settl'd in the
Mind>

[Folio 11 recto]

~~Mind, with the general Name annexed to [it] as is the Opinion of the~~
~~Authour of the Essay. Nor [does △ in Truth, seem to me to have any pre-~~
~~cise Bounds or Limits. For if [there were,] they had I do not~~
~~see, How there could be those those Doubts & Scruples, about the Sorting △~~
~~△ of particular Beings, which [that Authour insists on as a good Proof]~~
~~are observ'd sometimes to have happen'd. Neither do I think it neces=~~
~~ry the Kinds or Species of Things should be so very accurately bounded~~
~~& marked out. Language being made by & for the common Use of Men,~~
~~who do not ordinarily take notice of the Minuter & less Considerable~~
~~Differences of Things.~~ From all △ to me it seems evident that the hav-